UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 24 1985

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Maximum Injection Pressures for Class II Enhanced Recovery and Hydrocarbon Storage Wells in Rule Authorized Fields

FROM: Victor J. Kimm, Director
Office of Drinking Water

TO: Regional Administrators
Water Management Division Directors
Water Supply Branch Chiefs
Ground Water/UIC Section Chiefs
Regions II-VI and VIII-X

The UIC regulations in 40 CFR §147.104 (Alaska), §147.904 (Kentucky), §147.1154 (Michigan), §147.1354 (Montana), §147.1454 (Nevada), §147.1654 (New York), §147.1954 (Pennsylvania), §147.2154 (Tennessee), §147.504 (Florida), §147.1254 (Mississippi), §147.2912 (Osage Mineral Reserve, Oklahoma) require the respective Regional Administrators to set field or formation specific maximum injection pressures for existing enhanced recovery and hydrocarbon storage wells.

Section 147.104(a)(2)(ii) and its counterparts state that the owners and operators of rule authorized enhanced recovery and hydrocarbon storage wells

> "shall submit data acceptable to the Regional Administrator which defines the fracture pressure of the formation in which injection is taking place . . . The data shall be submitted to the Regional Administrator within 1 year of the effective date of this program."

Section 147.104(a)(1)(i) and its counterparts continue

> "the Regional Administrator shall establish maximum injection pressures [for fields or formations in which injection is taking place] after notice, opportunity for comment, and opportunity for a public hearing, according to the provisions of Part 124, Subpart A."

The EPA administered UIC programs for the States of Alaska[1], Kentucky, Michigan, Montana, Nevada, New York, Pennsylvania and Tennessee have been in effect for a year now. Operators of enhanced recovery and hydrocarbon storage wells in these states should have submitted fracture pressure data. The Florida, Mississippi and Osage programs will not have been in effect for one year until December 30, 1985, therefore these programs should still be collecting fracture pressure information.

After receiving an adequate number of fracture pressure values for a formation or field (at least 10 values), the Regional Administrator is required to set maximum injection pressure gradients based upon the data received. These gradients will be used in the formula specified in §147.103 and its counterparts to calculate the maximum injection pressure. The maximum injection pressure must fulfill the operating requirements of §144.28(f)(3)(ii), that is to say, the injection pressure shall not initiate or extend any fractures in the confining zone and shall not cause the movement of fluids into a USDW. In order to be conservative, the maximum injection pressure should be set at or just below the fracture pressure of the injection formation. This allows a margin of safety for the confining zone.[2]

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[1] The Alaska 1425 program for Class II injection wells is expected to be granted primacy during the Fall/Winter of 1985. For this reason, the Administrator is extending certain reporting deadlines (including fracture pressure gradients) for Alaska only from June 25, 1985 to December 30, 1985. If the Alaska primacy is not approved, the new deadlines will take effect.

[2] The UIC regulations actually allow the injection zone to be fractured during enhanced recovery operations. While the vast majority of operators do not inject at such high pressures, there will be some operators who will request authorization to operate at pressures higher than the fracture injection zone pressure. These operators may be granted the higher injection pressure (to be known as an alternative maximum pressure (AMP)) if they can show to the Regional Administrator that the performance standards of §144.28(f)(3)(ii) are satisfied. This AMP is authorized in §147.104(a)(1)(ii). If an operator is not satisfied with the AMP, he may seek authorization for a higher injection pressure through a permit application under §144.25(c).

Once a maximum injection pressure gradient has been established, a Federal Register notice should be prepared and forwarded to Headquarters for review. After an expeditious Headquarters review is complete, the Region should make arrangements for public notice, a comment period and a public hearing (if adequate interest is shown) according to 40 CFR 124.10, .11, .12, .13 and .14. The announcements should be treated similarly to a permit notice. For the sake of expediency, it would be wise to handle as many fields or formations as possible in one announcement.

If you have any further questions, please contact Daniel Sullivan at FTS 382-3699.